

PCT  
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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/807,721

DATE: 05/21/2002  
TIME: 15:54:10

Input Set : A:\PTO.VSK.txt  
Output Set: N:\CRF3\05212002\I807721.raw

**ENTERED**

3 <110> APPLICANT: AUBURN UNIVERSITY  
4 UNIVERSITY OF CENTRAL FLORIDA  
6 <120> TITLE OF INVENTION: PRODUCTION OF ANTIBODIES IN TRANSGENIC PLASTIDS  
8 <130> FILE REFERENCE: 1463-PCT-US-00  
10 <140> CURRENT APPLICATION NUMBER: 09/807,721  
C--> 11 <141> CURRENT FILING DATE: 2001-12-21  
13 <150> PRIOR APPLICATION NUMBER: PCT/US01/06274  
14 <151> PRIOR FILING DATE: 2001-02-28  
16 <160> NUMBER OF SEQ ID NOS: 6  
18 <170> SOFTWARE: PatentIn Ver. 2.1  
20 <210> SEQ ID NO: 1  
21 <211> LENGTH: 2059  
22 <212> TYPE: DNA  
23 <213> ORGANISM: Homo sapiens  
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31 Met Gly Val Gln Leu Gln Gln Ser Gly Pro Asp  
32 1 5 10  
34 ctg gtg aaa cct ggg gcc tca gtg aag ata tcc tgc aag gct tct gga 97  
35 Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly  
36 15 20 25  
38 tac aca ttc act gac tac aac ata cac tgg gtg aag cag agc cgt gga 145  
39 Tyr Thr Phe Thr Asp Tyr Asn Ile His Trp Val Lys Gln Ser Arg Gly  
40 30 35 40  
42 aag agc ctt gag tgg att gga tat att tat cct tac aat ggt aat act 193  
43 Lys Ser Leu Glu Trp Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Asn Thr  
44 45 50 55  
46 tac tac aac cag aag ttc aag aac aag gcc aca ttg act gta gac aat 241  
47 Tyr Tyr Asn Gln Lys Phe Lys Asn Lys Ala Thr Leu Thr Val Asp Asn  
48 60 65 70 75  
50 tcc tcc acc tca gcc tac atg gag ctc cgc agc ctg aca tct gag gac 289  
51 Ser Ser Thr Ser Ala Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp  
52 80 85 90  
54 tct gca gtc tat tac tgt gca acc tac ttt gac tac tgg ggc caa ggc 337  
55 Ser Ala Val Tyr Tyr Cys Ala Thr Tyr Phe Asp Tyr Trp Gly Gln Gly  
56 95 100 105  
58 acc act ctc aca gtg agc tca gca tcc ccg acc agc ccc aag gtc ttc 385  
59 Thr Thr Leu Thr Val Ser Ser Ala Ser Pro Thr Ser Pro Lys Val Phe  
60 110 115 120  
62 ccg ctg agc ctc gac agc acc ccc caa gat ggg aac gtg gtc gtc gca 433

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 63  | Pro | Leu | Ser | Leu | Asp | Ser | Thr | Pro | Gln | Asp | Gly | Asn | Val | Val | Val | Ala  |      |
| 64  | 125 |     |     |     | 130 |     |     |     |     |     |     |     | 135 |     |     |      |      |
| 66  | tgc | ctg | gtc | cag | ggc | ttc | ttc | ccc | cag | gag | cca | ctc | agt | gtg | acc | tgg  | 481  |
| 67  | Cys | Leu | Val | Gln | Gly | Phe | Phe | Pro | Gln | Glu | Pro | Leu | Ser | Val | Thr | Trp  |      |
| 68  | 140 |     |     |     | 145 |     |     |     |     |     |     |     | 150 |     |     | 155  |      |
| 70  | agc | gaa | agc | gga | cag | aac | gtg | acc | gcc | aga | aac | ttc | cca | cct | agc | cag  | 529  |
| 71  | Ser | Glu | Ser | Gly | Gln | Asn | Val | Thr | Ala | Arg | Asn | Phe | Pro | Pro | Ser | Gln  |      |
| 72  |     |     |     |     | 160 |     |     |     |     |     |     | 165 |     |     | 170 |      |      |
| 74  | gat | gcc | tcc | ggg | gac | ctg | tac | acc | acg | agc | agc | cag | ctg | acc | ctg | ccg  | 577  |
| 75  | Asp | Ala | Ser | Gly | Asp | Leu | Tyr | Thr | Ser | Ser | Gln | Leu | Thr | Leu | Pro |      |      |
| 76  |     |     |     |     | 175 |     |     |     |     |     |     | 180 |     |     | 185 |      |      |
| 78  | gcc | aca | cag | tgc | cca | gac | ggc | aag | tcc | gtg | aca | tgc | cac | gtg | aag | cac  | 625  |
| 79  | Ala | Thr | Gln | Cys | Pro | Asp | Gly | Lys | Ser | Val | Thr | Cys | His | Val | Lys | His  |      |
| 80  |     |     |     |     | 190 |     |     |     |     |     |     | 195 |     |     | 200 |      |      |
| 82  | tac | acg | aat | tcc | agc | cag | gat | gtg | act | gtg | ccc | tgc | cga | gtt | ccc | cca  | 673  |
| 83  | Tyr | Thr | Asn | Ser | Ser | Gln | Asp | Val | Thr | Val | Pro | Cys | Arg | Val | Pro | Pro  |      |
| 84  |     |     |     |     | 205 |     |     |     |     |     | 210 |     |     | 215 |     |      |      |
| 86  | cct | ccc | cca | tgc | tgc | cac | ccc | cga | ctg | tcg | cac | cga | ccg | gcc | ctc | 721  |      |
| 87  | Pro | Pro | Pro | Cys | Cys | His | Pro | Arg | Leu | Ser | Leu | His | Arg | Pro | Ala | Leu  |      |
| 88  |     |     |     |     | 220 |     |     |     |     |     | 225 |     |     | 230 |     | 235  |      |
| 90  | gag | gac | ctg | ctg | tta | ggt | tca | gaa | gcf | aac | ctc | acg | tgc | aca | ctg | acc  | 769  |
| 91  | Glu | Asp | Leu | Leu | Leu | Gly | Ser | Glu | Ala | Asn | Leu | Thr | Cys | Thr | Leu | Thr  |      |
| 92  |     |     |     |     | 240 |     |     |     |     |     | 245 |     |     | 250 |     |      |      |
| 94  | ggc | ctg | aga | gat | gcc | tct | ggt | gcc | acc | ttc | acc | tgg | acg | ccc | tca | agt  | 817  |
| 95  | Gly | Leu | Arg | Asp | Ala | Ser | Gly | Ala | Thr | Phe | Thr | Trp | Thr | Pro | Ser | Ser  |      |
| 96  |     |     |     |     | 255 |     |     |     |     |     | 260 |     |     | 265 |     |      |      |
| 98  | ggg | aag | agc | gct | gtt | caa | gga | cca | cct | gag | cgt | gac | ctc | tgt | ggc | tgc  | 865  |
| 99  | Gly | Lys | Ser | Ala | Val | Gln | Gly | Pro | Pro | Glu | Arg | Asp | Leu | Cys | Gly | Cys  |      |
| 100 |     |     |     |     | 270 |     |     |     |     |     | 275 |     |     | 280 |     |      |      |
| 102 | tac | acg | gtg | tca | tca | gta | ctt | cct | ggc | tgt | gcc | cag | cca | tgg | aac | cat  | 913  |
| 103 | Tyr | Ser | Val | Ser | Val | Leu | Pro | Gly | Cys | Ala | Gln | Pro | Trp | Asn | His |      |      |
| 104 |     |     |     |     | 285 |     |     |     |     |     | 290 |     |     | 295 |     |      |      |
| 106 | ggg | gag | acc | tcc | acc | tgc | act | gct | gcc | cac | ccc | gag | ttg | aag | acc | cca  | 961  |
| 107 | Gly | Glu | Thr | Phe | Thr | Cys | Thr | Ala | Ala | His | Pro | Glu | Leu | Lys | Thr | Pro  |      |
| 108 |     |     |     |     | 300 |     |     |     |     |     | 305 |     |     | 310 |     | 315  |      |
| 110 | cta | acc | gcc | aac | atc | aca | aaa | tcc | gga | aac | aca | ttc | cg  | ccc | gag | gtc  | 1009 |
| 111 | Leu | Thr | Ala | Asn | Ile | Thr | Lys | Ser | Gly | Asn | Thr | Phe | Arg | Pro | Glu | Val  |      |
| 112 |     |     |     |     | 320 |     |     |     |     |     | 325 |     |     | 330 |     |      |      |
| 114 | cac | ctg | ctg | ccg | ccg | ccg | tcg | gag | gag | ctg | gcc | ctg | aac | gag | ctg | gtg  | 1057 |
| 115 | His | Leu | Leu | Pro | Pro | Pro | Ser | Glu | Glu | Leu | Ala | Leu | Asn | Glu | Leu | Val  |      |
| 116 |     |     |     |     | 335 |     |     |     |     |     | 340 |     |     | 345 |     |      |      |
| 118 | acg | ctg | acg | tgc | ctg | gca | cgt | ggc | ttc | agc | ccc | aag | gat | gtg | ctg | gtt  | 1105 |
| 119 | Thr | Leu | Thr | Cys | Leu | Ala | Arg | Gly | Phe | Ser | Pro | Lys | Asp | Val | Leu | Val  |      |
| 120 |     |     |     |     | 350 |     |     |     |     |     | 355 |     |     | 360 |     |      |      |
| 122 | cgc | tgg | ctg | cag | ggg | tca | cag | gag | ctg | ccc | cgc | gag | aag | tac | ctg | act  | 1153 |
| 123 | Arg | Trp | Leu | Gln | Gly | Ser | Gln | Glu | Leu | Pro | Arg | Glu | Lys | Tyr | Leu | Thr  |      |
| 124 |     |     |     |     | 365 |     |     |     |     |     | 370 |     |     | 375 |     |      |      |
| 126 | tgg | gca | tcc | cg  | cag | gg  | ttc | agc | cc  | acc | acc | acc | tat | gct | gtg | 1201 |      |
| 127 | Trp | Ala | Ser | Arg | Gln | Glu | Pro | Ser | Gln | Gly | Thr | Thr | Tyr | Tyr | Ala | Val  |      |

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| 128 | 380   | 385 | 390 | 395  |
| 130 | acc agc ata ctg cgc gtg gca gcc gag gac tgg aag aag ggg gag acc |     |     | 1249 |
| 131 | Thr Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys Lys Gly Glu Thr |     |     |      |
| 132 | 400   | 405 | 410 |      |
| 134 | ttc tcc tgc atg gtg ggc cac gag gcc ctg ccg ctg gcc ttc aca cag |     |     | 1297 |
| 135 | Phe Ser Cys Met Val Gly His Glu Ala Leu Pro Leu Ala Phe Thr Gln |     |     |      |
| 136 | 415   | 420 | 425 |      |
| 138 | aag acc atc gac cgc ttg gcg ggt aaa ccc acc cat atc aat gtg tct |     |     | 1345 |
| 139 | Lys Thr Ile Asp Arg Leu Ala Gly Lys Pro Thr His Ile Asn Val Ser |     |     |      |
| 140 | 430   | 435 | 440 |      |
| 142 | gtt gtc atg gcg gag gcg gac acc tgc tac aga tgaaatattg          |     |     | 1391 |
| 143 | Val Val Met Ala Glu Ala Asp Gly Thr Cys Tyr Arg                 |     |     |      |
| 144 | 445   | 450 | 455 |      |
| 146 | cgatatccgga gggattt atg gac att gtg atg acc cag tct cca gca atc |     |     | 1441 |
| 147 | Met Asp Ile Val Met Thr Gln Ser Pro Ala Ile                     |     |     |      |
| 148 | 460   | 465 |     |      |
| 150 | atg tct gca tct cca ggg gag aag gtc acc ata acc tgc agt gcc agc |     |     | 1489 |
| 151 | Met Ser Ala Ser Pro Gly Glu Lys Val Thr Ile Thr Cys Ser Ala Ser |     |     |      |
| 152 | 470   | 475 | 480 |      |
| 154 | tca atg gta agt tac atg cac tgg ttc cag cag aag cca ggc act tct |     |     | 1537 |
| 155 | Ser Met Val Ser Tyr Met His Trp Phe Gln Gln Lys Pro Gly Thr Ser |     |     |      |
| 156 | 485   | 490 | 495 |      |
| 158 | ccc aaa ctc tgg ctt tat agc aca tcc aac ctg gct tct gga gtc cct |     |     | 1585 |
| 159 | Pro Lys Leu Trp Leu Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro |     |     |      |
| 160 | 500   | 505 | 510 |      |
| 162 | gct cgc ttc agt ggc agt gga tct ggg acc tct tac tct ctc aca atc |     |     | 1633 |
| 163 | Ala Arg Phe Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile         |     |     |      |
| 164 | 515   | 520 | 525 | 530  |
| 166 | agc cga atg gag gct gaa gat gct gcc act tat tac tgc cat caa agg |     |     | 1681 |
| 167 | Ser Arg Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys His Gln Arg |     |     |      |
| 168 | 535   | 540 | 545 |      |
| 170 | act agc tac cca tac aca ttc gga ggg ggg acc aag ctt gag atc aaa |     |     | 1729 |
| 171 | Thr Ser Tyr Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys     |     |     |      |
| 172 | 550   | 555 | 560 |      |
| 174 | cga act gtg gct gca cca tct gtc ttc atc ttc ccg cca tct gat gag |     |     | 1777 |
| 175 | Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu |     |     |      |
| 176 | 565   | 570 | 575 |      |
| 178 | cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg ctg aat aac ttc |     |     | 1825 |
| 179 | Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe |     |     |      |
| 180 | 580   | 585 | 590 |      |
| 182 | tat ccc aga gag gcc aaa gta cag tgg aag gtg gat aac gcc ctc caa |     |     | 1873 |
| 183 | Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln |     |     |      |
| 184 | 595   | 600 | 605 | 610  |
| 186 | tcg ggt aac tcc cag gag agt gtc aca gag cag gac agc aag gac agc |     |     | 1921 |
| 187 | Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser |     |     |      |
| 188 | 615   | 620 | 625 |      |
| 190 | acc tac agc ctc agc agc acc ctg acg ctg agc aaa gca gac tac gag |     |     | 1969 |
| 191 | Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu |     |     |      |
| 192 | 630   | 635 | 640 |      |

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194 aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag ggc ctg agc tcg 2017  
 195 Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser  
 196 645 650 655  
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 200 660 665  
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 213 20 25 30  
 215 Tyr Asn Ile His Trp Val Lys Gln Ser Arg Gly Lys Ser Leu Glu Trp  
 216 35 40 45  
 218 Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Asn Thr Tyr Tyr Asn Gln Lys  
 219 50 55 60  
 221 Phe Lys Asn Lys Ala Thr Leu Thr Val Asp Asn Ser Ser Thr Ser Ala  
 222 65 70 75 80  
 224 Tyr Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr  
 225 85 90 95  
 227 Cys Ala Thr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val  
 228 100 105 110  
 230 Ser Ser Ala Ser Pro Thr Ser Pro Lys Val Phe Pro Leu Ser Leu Asp  
 231 115 120 125  
 233 Ser Thr Pro Gln Asp Gly Asn Val Val Val Ala Cys Leu Val Gln Gly  
 234 130 135 140  
 236 Phe Phe Pro Gln Glu Pro Leu Ser Val Thr Trp Ser Glu Ser Gly Gln  
 237 145 150 155 160  
 239 Asn Val Thr Ala Arg Asn Phe Pro Pro Ser Gln Asp Ala Ser Gly Asp  
 240 165 170 175  
 242 Leu Tyr Thr Thr Ser Ser Gln Leu Thr Leu Pro Ala Thr Gln Cys Pro  
 243 180 185 190  
 245 Asp Gly Lys Ser Val Thr Cys His Val Lys His Tyr Thr Asn Ser Ser  
 246 195 200 205  
 248 Gln Asp Val Thr Val Pro Cys Arg Val Pro Pro Pro Pro Cys Cys  
 249 210 215 220  
 251 His Pro Arg Leu Ser Leu His Arg Pro Ala Leu Glu Asp Leu Leu  
 252 225 230 235 240  
 254 Gly Ser Glu Ala Asn Leu Thr Cys Thr Leu Thr Gly Leu Arg Asp Ala  
 255 245 250 255  
 257 Ser Gly Ala Thr Phe Thr Trp Thr Pro Ser Ser Gly Lys Ser Ala Val  
 258 260 265 270  
 260 Gln Gly Pro Pro Glu Arg Asp Leu Cys Gly Cys Tyr Ser Val Ser Ser  
 261 275 280 285  
 263 Val Leu Pro Gly Cys Ala Gln Pro Trp Asn His Gly Glu Thr Phe Thr  
 264 290 295 300

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266 Cys Thr Ala Ala His Pro Glu Leu Lys Thr Pro Leu Thr Ala Asn Ile
267 305           310           315           320
269 Thr Lys Ser Gly Asn Thr Phe Arg Pro Glu Val His Leu Leu Pro Pro
270           325           330           335
272 Pro Ser Glu Glu Leu Ala Leu Asn Glu Leu Val Thr Leu Thr Cys Leu
273           340           345           350
275 Ala Arg Gly Phe Ser Pro Lys Asp Val Leu Val Arg Trp Leu Gln Gly
276           355           360           365
278 Ser Gln Glu Leu Pro Arg Glu Lys Tyr Leu Thr Trp Ala Ser Arg Gln
279           370           375           380
281 Glu Pro Ser Gln Gly Thr Thr Tyr Ala Val Thr Ser Ile Leu Arg
282 385           390           395           400
284 Val Ala Ala Glu Asp Trp Lys Lys Gly Glu Thr Phe Ser Cys Met Val
285           405           410           415
287 Gly His Glu Ala Leu Pro Leu Ala Phe Thr Gln Lys Thr Ile Asp Arg
288           420           425           430
290 Leu Ala Gly Lys Pro Thr His Ile Asn Val Ser Val Val Met Ala Glu
291           435           440           445
293 Ala Asp Gly Thr Cys Tyr Arg Met Asp Ile Val Met Thr Gln Ser Pro
294           450           455           460
296 Ala Ile Met Ser Ala Ser Pro Gly Glu Lys Val Thr Ile Thr Cys Ser
297 465           470           475           480
299 Ala Ser Ser Met Val Ser Tyr Met His Trp Phe Gln Gln Lys Pro Gly
300           485           490           495
302 Thr Ser Pro Lys Leu Trp Leu Tyr Ser Thr Ser Asn Leu Ala Ser Gly
303           500           505           510
305 Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu
306           515           520           525
308 Thr Ile Ser Arg Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys His
309           530           535           540
311 Gln Arg Thr Ser Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu
312 545           550           555           560
314 Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
315           565           570           575
317 Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
318           580           585           590
320 Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala
321           595           600           605
323 Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys
324           610           615           620
326 Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp
327 625           630           635           640
329 Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu
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333           660           665
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337 <211> LENGTH: 50
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VERIFICATION SUMMARY  
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Input Set : A:\PTO.VSK.txt  
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L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date